PORSCHE PANORAMA

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"SO I BLEW OFF THE D-JAGS IN TEN LAPS!"

SIG MAYERLIN (JUNIOR THAT IS) GETS THE "FEEL OF THE WHEEL" EARLY IN LIFE . . . PHOTO BY JEAN SPEIDEL

PORSCHE PANORAMA

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WHAT IS THE PORSCHE CLUB OF AMERICA?

The Porsche Club of America is a national, one-marque club. Its Objectives are basically: to Foster and Share the enjoyment of owning and driving a Porsche, to improve factory and dealer relationships, to share technical knowledge and information and to improve maintenance and service, to promote courtesy and safety on the road.

"Any person 18 years of age or over, who owns or is a co-owner of a Porsche may become a member of the Porsche Club of America upon presentation of an executed application, payment of dues and acceptance by the membership committee." Members receive a membership card, the monthly club publication Porsche Panorama and a Roster of club members.

Porsche owners anywhere may become members of PCA. If residing in an area where there is a Chartered PCA Region, they are also required to join that PCA Regional Club. Membership categories are: Active, Family, Associate and Honorary. For additional information contact the pertinent addresses listed on this page.

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Don Sessler in RS

Hansgen on the Lister Jag

Nagle Bridwell, E. Pa., on Super Speedster

EAST COAST SCCA OPENER AT MARLBORO

The East Coast National SCCA schedule started off with the roar of straight pipes at Marlboro, Maryland, one of the favorite courses for Porsches.

The Class F and G production race saw the eastern debut of the GT Carrera as a production car and what a coming-out party they had. Practice had given a clue to the speed of the Pupulidy GT. Back after a year with Formula 3, there was again the familiar picture of a little puppy and the words "Piloto Pup," underneath, on the Porsche. (Remember that black 1300 Super Coupe—National Class G Champion in '56.) Also on the starting line was that man of MG fame, Major "Cappy" Cappiello in a GT.

As starter Tex Hopkins gave the green flag, the cars shot around the oval and out to the road course with Eastern Pennsylvania PCAer Nagle Bridwell in the lead in his '58 Super speedster. Around the hairpin they went and then a streak went by Bridwell on the straight. Pupulidy was in the lead and for all practical purposes, the race was over as quickly as that. At the end of 20 laps it was all Porsche as Pupulidy took first, Cappiello second, Bill Hughes from Louisiana in his '57 Super speedster third, and Bridwell in fourth. After the Porsche pushers, came the Alfa Veloces led by Bob Grossman.

The fifth race, a handicap affair of 10 laps, saw Porsches take the first 5 places with Cappiello copping first. Pupulidy had decided to call it a day after his brilliant national point race.

The eighth race of 40 laps for the President's cup brought out all the big iron along with the "giant killers" from Stuttgart. Only two RS Spyders where at Marlboro this year . . . one driven by Bob Holbert, the other by Don Sesslar of Lancaster, Ohio.

Taking the lead right from the start, Walt Hansgen made the crowd take notice the way he literally burned up the course in the Cunningham Lister Jaguar. The Lister had the 3.8 Jaguar engine mounted and it was a case of "I've heard that song before." Holbert, fourth on lap one, moved into second on lap nine after passing PCAer Ed Crawford in the Cunningham D Jaguar. As the eleventh lap was completed we had a sand storm and by the seventeenth lap, everyone except the drivers ran for shelter, as suddenly there was a real cloud burst . . . rain and more rain. Hansgen went from a dry 1:40 sec. lap to a wet 2:05 . . . amazing . . . Walter is quite a driver! About the thirty-first lap, as the rain stopped, Don Sessler, who had passed Crawford in the rain, began a determined bid for second place . . . he was gaining 3 seconds per lap on Holbert. The surge of Sessler lost its momentum when he spun twice on the slick track.

The finish saw Hansgen get the checkered flag followed by Holbert and Sessler. Holbert was first in Class F Modified, gaining a cool 1000 points towards the National Championship.

Bob Holbert, Ready to GO!

"Piloto Pup" Pupulidy

"Nor Greater Love" . . . hath a wife for a DB

PORSCHE NOTES AT MARLBORO

The Pupulidy G8 has the tach turned around so that when you see the needle come straight up, that's 8.000. Pup also has a head rest built over his roll bar like the Spyders. As a matter of fact, it goes like those Spyders.

John Cuevas, PCAer from Florida, had tough luck at Marlboro . . . Marlboro is always tough the first time out and John was used to those airports down south. Watch for John . . . he means business. He has a spare GT engine, transmission, lots of tires and various other parts. He intends to make all the nationals he possibly can.

Miss those Wallace-Holbert duels of last year . . . used to have the crowd in an uproar from start to finish.

Many PCAers at Marlboro, while another gang were running the Chesapeake Rally.

That Lister Jag was just too fast for our Spyders. Hansgen and the Lister look like they will be tough to beat.

PCA EXECUTIVE COUNCIL MEETS

The PCA Executive Council met again at Willow Grove, Pennsylvania, April 25 and 26. Present were: Max Bunnell, Ken Twigg, Phil Troth, Charles Beidler, Earl Kirschbaum, Robert Jamison, Wayne Green, Bill Sacks, Bill Sholar, Bob Hammett, and Hans Forster.

It was reported that membership has grown to about 800.

Regions "hosting" at National events will, in the future, be given some assistance from the national organization.

One of the most important decisions made was to establish the office of Executive Secretary. This should speed up paper work tremendously.

Charters were granted to the Rocky Mountain Region and Central Michigan Region. Fred P. Blume of Cheyenne, Wyoming is Regional Director for the Rocky Mountain Region and Earl Kirschbaum of Alma, Michigan, is Regional Director of the Central Michigan Region.

A questionnaire will be mailed to all PCA members in an effort to determine the kind of service being received, and whether or not car performance is satisfactory.

Reading Down:
PCAer Ed Crawford on D-Jag
Johnny Cuevas, Miami PCAer
Bridwell again, with Beidler and Loquasto
Nick Mattlinger, Manhattan's Porsche Maestro Checks a Carrera

BIGGER AND BETTER THAN EVER

THIRD PARADE AT BINGHAMTON ALL SET

Plans for the forthcoming Porsche Parade have been firmed up. Before long, members will receive a registration kit containing all of the pertinent information on the 1958 PORSCHE PARADE. We suggest that you make your reservation PROMPTLY upon receiving the kit. This year's meeting will be at the COLONIAL MOTEL on US Route 17, about three miles west of Binghamton, New York.

As in the past, factory personnel will inspect cars; and technical speakers of the highest calibre will be featured.

A driving school is scheduled. The object primarily will be to demonstrate the roadability of our cars and the best driving techniques.

There will be a separate discussion on racing the Porsche under the leadership of Ken Varker.

A rally is planned through the beautiful countryside of New York State's southern tier. This event promises to be something to be remembered. Usual rally equipment is required.

Manhattan Auto and Castrol will again be hosts to cocktail parties. Those who attended last year will agree that these parties were very popular.

Not to be forgotten is the Gymkhana under the able direction of Dick Boudelette. This will be strictly an event to test driving ability and not car durability.

Factory representatives will be on hand to discuss design features of the new models and to answer any questions which you might have. In fact, a complete engine will be on display throughout the Porsche Parade (chained to Mr. Dramm's car.)

Remember the dates—July 23 to 26. MARK YOUR CALENDAR—NOW.

Incidentally, there was an unsually fine response to the initial post card inquiry which was sent out sometime ago regarding this year's Parade and judging from the information received, it should be highly successful. In fact, we can safely predict that it will be the biggest and best from every standpoint. From as far away as California, Porsche Pushers will push on to Binghamton. You won't want to miss all this, so—

REMEMBER THE DATE.....July 23 to 26, 1958

REMEMBER THE PLACE.....Colonial Motel Binghamton, N. Y.

To save time (and postage), your Parade "Registration Kit" is enclosed with this issue of Pano. The Kit comprises the following items:

Invitation to the Third Annual Parade
Registration Form (fill out and send in NOW)
Folder on Colonial Motor Inn . . . Parade Headquarters.
Reservation Form and rates at Colonial Motor Inn. (Send this immediately . . . with $10.00 deposit, to make sure you have a place to sleep.)
Brief description of the historical "Triple Cities" area.
Map of the Parade area (included on the Invitation.)

The program is tentatively scheduled

WEDNESDAY, July 23
A. M.—Registration
P. M.—Late registration
Test drives by factory personnel
Clean-up for Concours
General welcome and movies

THURSDAY, July 24
A. M.—Concours Judging
Technical Meeting
P. M.—"How to Drive Your Porsche"
Swim
Cocktail Party
Dinner

FRIDAY, July 25
A. M.—Technical Meetings
P. M.—Rally
Annual Business Meeting

SATURDAY, July 26
A. M.—Gymkhana
P. M.—Free 'til Cocktail Party at 5:00
Victory Banquet

RPMs

. . . We come a little late this month . . . wanted to get all the latest news on the PARADE. Congratulations to TOMMY THOMAS for winning the CHESAPEAKE TROPHY RALLY . . . Tommy has an article on speed changes in Pano this month. Looks like the RS has put a lot of 550 Spyders up for sale . . . with an all weather top, a 550 would make a wonderful rally car . . . did we just hear someone do a flip over in Stuttgart? We have two friends who sold their Porsches . . . one bought a Corvette, the other a TR 3. Just last month, under warranty, the Corvette needed a new clutch . . . this month, the TR 3, with under 4000 miles, also went under clutch surgery . . . the clutch on our bomb looks better all the time. Look for a new magazine, SPORTS CAR WHEEL, to do a road test on a Super . . . this group did a terrific job on the Porsche in a VW question in their first issue . . . don't miss it. SEE YOU AT THE PARADE.

NEWS
FROM THE REGIONS

The WASHINGTON STATE REGION, still in its infancy, held its first Sunday Picnic May 4th at Saltwater State Park, 15 miles south of Seattle. A total of 19 Porsches were present, including 3 old PCAers, 7 new ones 3 new ones who paid on the spot, and 6 more who took home application blanks and promised to join. Plaudits to JERRY MATHEWS, who drove nearly 200 miles from Wenatchee on battery alone (generator dead) to join. Belle of the show was the brand new Hardtop, the first to be seen in these parts. Salesman, BRUCE McCASSEY, did a wonderful job of selling PCA, and then he and GENE RIDEOUT got out their Uni-Syns and tools and went to work. Several of the "Jewels" left healthier than they arrived. The WASHINGTON REGION has 24 more new paid members from April 15th to May 8th, and there will be more. Lack of high speed freeways and expanded geography handicap frequent large get-togethers, but after May 4th, it was evident that the "Love of Porsche" runs as hot in Washington as anywhere.

A dinner meeting of the CONNECTICUT-WESTCHESTER REGION, was held March 29, 1958 at Oakdale Tavern, Wallingford, Connecticut. (This, according to the management, is the only Inn in New England where George Washington didn't stop.) A good attendance of about forty members and friends participated in a technical question and answer session, emceed by Regional Executive LUKE ZILUCA. Guest speaker was Mr. Truman Stevene, Assistant Sales Manager of Bosch, who did a commendable job with his talk on his company's products, plans and purpose, in spite of just having flown in from St. Louis, Missouri in time for the meeting.

A meeting of the CENTRAL NEW YORK REGION was held on April 19th at the Sheraton Dewitt Motel near Syracuse. The officers found it difficult to bring the meeting to order because most of those attending were busy inspecting and admiring JOE MARSEY'S new hard-top convertible. The gang was finally lured inside by a showing of slides of the Sebring event, taken and displayed by a visiting PCAer, DON COMUNALE, of CHICAGO.

This was followed by a short business meeting, conducted by regional president, DR. AL SCHAEFER.

Then arrived, from New York City, the day's special guests, MESSRS. ERICH FILIUS and HERBERT DRAMM. For more than three hours, JOE MARSEY, Activities Chairman, plied these experts with technical questions which he had solicited from the membership. This type of session could have gone on indefinitely, but dinner-time forced a halt. After a good dinner the members spent about an hour examining the other Porsches and demonstrating their own.

I FELT SORT OF BAD . . .

You know, I bought my Beetle because it is such a well-built car. Besides being fun to drive, it is also very economical—so I was told; and since the Beetle is primarily a business car, this made sense. But, when it became necessary, recently, to have the transmission rebuilt, I was forced to take stock of what the Beetle has set me back since I have had it. Recalling various maintenance bills, I was appalled. However, not wanting to jump to conclusions, I assembled all my bills. Now—I really was disturbed about the cost of up-keep of the little "thorough-bred." The listing below will speak for itself:

Adjust wheels, pack wheel bearings, and adjust clutch	$ 12.10
Tune engine	10.50
Repair transmission shifter fork	144.44
Two fan belts	3.00
Clutch cable	1.67
Adjust steering gear and check transmission	20.90
New muffler—Abarth	62.50
Tachometer cable and brake adjustment	8.33
New tires, Michelin X	130.97
Speedometer cable	6.74
Paint touch-up	45.00
Adjust valves	5.00
New shocks and brake return springs	96.09
Replace timing gear, rings, grind valves	124.02
Adjust clutch	6.50
Rebuild transmission	262.00
Replace tire	37.10
Total	$976.86

Based on 70,000 miles of driving (actually 72,600 miles now) in twenty-three months (including about 9,000 miles on a rough Mexican trip) these figures break down in cost per mile as follows:

Reading Down:
The Biggest Assembly of Porsches Ever Seen in Washington State
The Gang from Bellingham
Doc Rideout and Bruce McCassey, the "Sparkplugs" of the Washington Region
Bruce Gives "the Word" on a New Speedster

Maintenance ....$	808.79	or $0.011 per mile
Gas	700.00	0.01 " "
Oil	75.00	0.001 " "
Tires	168.07	0.0024 " "
Insurance	194.84	0.003 " "
Depreciation	1,100.00	0.0156 " "
Total.....$	3,046.70	0.043 per mile

Frankly, these figures did not indicate to me that the Beetle is a durable and economical car, and doubts about my "pride-and-joy" started to creep in. Then, too, I thought of all the trips to Porsche specialists and the delays in getting repair parts. All this, in spite of the fact that the car gets the very best of attention.

The other day, I compared notes with a friend who also uses his car for business. His car is the "master of the road" type vehicle. "Gas? Oh, I have to figure only about $0.03 per mile using premium gas," he said. This made me feel better when I thought of my gas cost. Then he told me about the unfortunate trouble with his transmission about a week after the warranty ran out—but the garage split the cost with him so it was only about $250.00. Three months later, the same trouble recurred to his "lazy man's gear box" but this time he had to pay the full cost. Again, I compared this with my experience, and the situation looked a little brighter for the Beetle.

But . . . if only I did not lose so much time waiting for parts and hunting them up—if I could simply go to the local auto supply store or garage, pick up my parts and put the car back together again, then . . . a friend of mine drove into town in a brand new car (it still had the driving instructions in it.) It's the make that climbs the Andes back and forth, you know? . . . What happened? The car stopped right in the middle of a down-town street in Buffalo and would not move. Finally, a local agency towed the car in, and a bad fuel pump was blamed for the trouble. Simply that! But, there was no spare fuel pump in that garage, or any other garage. "They had been waiting for a shipment for some time." Finally, after much friendly persuasion, a fuel pump was appropriated from a new car and my friend was finally on his way. The significant thing about this episode is that one would normally expect to obtain a fuel pump without trouble in a city the size of Buffalo. Bear in mind that this was one of the most widely advertised cars. After hearing this man's "tale of woe" and remembering what I had heard from my friend about his driving cost, I looked at my tally sheet again, went to the garage, washed the ugly bug, and even gave it a coat of wax for good measure.

Want to know something? I don't feel so bad any more.

OIL PRESSURE AND GAUGE INSTALLATION

The subject of oil pressure, what it is and what it should be, has occupied more of this author's time over the last two years than any other single project on the Porsche. It all started after reading Paul Fontaine's article in Pano Vol. I, No. 2. This article is in the technical reprint of Vol. I. It points out how the pressure relief piston in the oil circulation system can become stuck with resultant extreme oil pressure, which in turn can lead to a ruined clutch and many other things. Regular inspection of the relief valve, along with good clean oil in the case at all times will certainly prevent most of these troubles, but it still doesn't tell you where your oil pressure is or should be. We realize that there is hardly a production car made that doesn't use more warning (idiot) lights and fewer gauges with each new model, but that is because the manufacturer realizes that most drivers wouldn't know what the dials should read anway, where they might pay some attention to a bright colored light.

At about this time two years ago, my Porsche had rolled up 20,000 miles and I began to notice that occasionally on idling after a hard run on a hot day the green light would go on. A thorough search of the then available chapters of the shop manual gave little comfort; only that the green light would go on somewhere between 4.3 and 8.5 lbs. Only a few months ago the last chapter arrived and on page L 63 it mentions, "An occasional lighting-up of the lamp with the engine warm and at low speed does indicate trouble, if it goes out again as the speed increases."

Two years ago there were not readily available matching lighted oil pressure dials for the Porsche dash, so I purchased a Stewart Warner gauge for $4 and mounted it on the radio dash blank. It was connected with appropriate fittings to a copper tube which curved down through the tunnel and then into the left side of the engine compartment. A small hole was drilled for the rear exit from the tunnel, and the tube sealed in it with rubber cement. Care must be used in this type of installation to prevent any acute flexing of the tube. On the back of the engine the oil warning switch was removed and a T fitting put in its place. The switch was then placed in the top of the T and the wire reconnected. A short length of flexible oil line was connected to the end of the T and joined to the copper tube through appropriate fittings aft of the engine back plate. The section of flexible oil line was put in to absorb the vibration of engine torque which would be liable to eventually fatigue the copper tube. All the fittings necessary can be obtained at an automotive parts store, and it is wise to go over all fittings and thread sizes with a parts man. Permatex sealer was used on all threads. When finally installed, this unit worked well. Its disadvantages are the vulnerability of the copper tube carrying a head of oil pressure, the considerable time required to install, and the unlighted unmatched dial. A well placed rock from beneath could mean a leak and loss of all the oil rather quickly in some out-of-the-way place.

After this installation, I knew what my oil pressure was, but still didn't know or couldn't find any reliable information on where the pressure should run for a given temperature and rpm. As a control, I installed a similar unit on my wife's brand new Volkswagen, since its lubrication system was identical with that of my two piece case Porsche engine.

The following observations and comparisons were made. It should be mentioned that 30 wt. MM Valvoline oil is used in both engines and the the VW has a Fram oil filter added, giving it the same oil capacity as the Porsche. On starting cold the pressure in both engines goes up to 40 lbs., at which point the relief valve keeps it from going higher. The pressure in the VW remains around 35 lbs. at any speed much above idle as long as the oil temperature is below 190 F. On a few occasions I have pushed the oil temperature to 210 F. and the pressure dropped to 30 lbs. at 2500 rpm. Warm idle gives a reading of 15-18 lbs.

Now to see how these readings from a still young engine compare to those of a 1954 Porsche N which has an identical lubrication system and 43,000 miles on it now. The oil temperature climbs noticeably faster in the VW engine than it does in the Porsche, and also under full load at the same outside temperature the VW gets hotter. The thermostatically controlled fan ring and iron instead of aluminum cylinders are probably some of the reasons the VW runs hotter. Except in warm weather the Porsche's oil temperature seldom goes above 150 F. At this temperature and 2500 rpm the pressure reads 22-25 lbs. At 4000 rpm and above the pressure reads 30 lbs. The hottest I have ever gotten the oil was 200 F. Here 4000 rpm developed 25 lbs. pressure, and 2500 rpm 18 to 20 lbs. Idle with oil temperature near 200 F. caused the pressure to drop to 6-8 lbs. (causing the green light to burn). At 140 F., idle developed 10-12 lbs. The above temperature pressure ratios remain the same at 43,000 miles as they did at 20,000 miles when the gauge was first installed. This engine has never been torn down, and compression on each cylinder varies less than 5 lbs.

The above data helped make several pertinent observations possible. One can see how the oil viscosity markedly decreases with increased temperature. With both oil temperature and pressure gauges, one can more intelligently select the right weight of oil to use. Some multigrade oils could result in decreased pressure. At first

glance, it might seem that the engine should develop more oil pressure, especially when compared with the pressure on some six cyclinder sports car engines. Remember, the Porsche does not have drilled connecting rods, and the crankshaft is only a third the length of most six's. Not as great a pressure is needed because there are not as many long drilled oil passages. Too much pressure is not good, since it means oil is not flowing rapidly through the bearings, and hence not as effectively cooling them. The Porsche crankshaft bearings are of larger diameter, but are not wide; which would not require as much pressure to effectively lubricate them as a wide bearing would.

I recently obtained access to the latest VW Workshop Manual, which contains much more information than our 356 Porche manuals. In the last section, ("T") the operating acceptable oil pressure at 2500 rpm with engine at operating temperature is given at 23-26 lbs. for pre-1954 models, and 28 lbs. at 2500 rpm with oil temperature specified at 70 C for all models from January 1954 on. These are specified as being readings on new engines. In the light of all this it appears that my Porsche engine with 43,000 miles still puts out an acceptable oil pressure.

With the advent of the three piece crankcase in 1955, the oil pump gears were widened. I have no specific data, but imagine that the pressure runs a little higher. The new 1958 engine is known to contain a redesigned oil system, but this will have to remain for some lucky 1958 owner to enlighten us on.

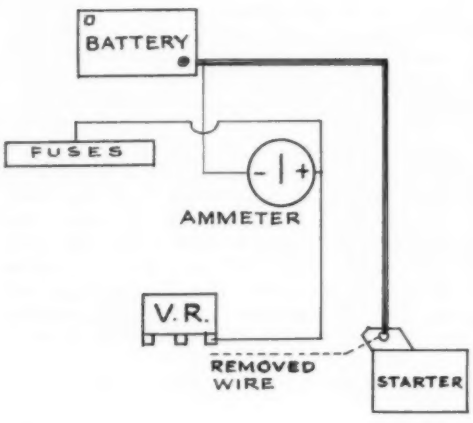
Recently, with the availability of matching lighted VDO oil pressure and ammeter gauges for the Porsche (as pictured in the ad on page 11 of the Feb. '58 Pano), I decided to replace my initial direct tube gauge with a VDO electrical unit, and also install a matching ammeter at the same time. This I have done and am happy to report that both old and new units record the same pressure readings throughout their ranges. The VDO oil pressure gauge and sending unit comes with satisfactory directions for installation. No major wiring is needed, and the wire which formerly connected to the green light sending unit on the engine is utilized. I made one modification in installing it. The directions call for a section of copper tubing to run from an adapter supplied (which takes the place of the sending unit for the green light) to the sending unit which is mounted on the rear cover between engine and body. I used a short section of new oil line instead, which I feel is less vulnerable to damage and torsion fatigue. This did require drilling out and threading the inside of the adapter that screws on the sending unit to accept the ordinary male coupling of standard oil line. Most shops have these dies available.

The VDO matching lighted ammeter and oil pressure gauges were mounted symetrically on the vinyl covered radio blank in the middle of the dash. The back of this blank is made of molded bakelite with a small piece of round wood in the middle which would be removed for a speaker. The bakelite cannot be drilled well, so the vinyl was carefully removed, and a new plywood back made to fit. The vinyl was then carefully glued on and two 52 mm holes cut. Incidentally, the small metal Porsche sign can be removed and replaced using plastic glue in the middle bottom area. These instruments can be supplied with brackets for under dash mounting if so desired.

AMMETER INSTALLATION

Installation of the ammeter entails considerably more work; do not count on doing it in anything less than two full evenings. If you hire a garage to do it, expect a bill for labor and necessary wire and connections to run several times the actual cost of the ammeter. No directions were supplied with the ammeter, perhaps because of the different wiring layout in different models. Before attempting this, study the wiring diagram for your car in the shop manual. If you aren't familiar with wiring, don't try this job as your first one, as this has to be done right and very carefully.

You can mount the ammeter in the dash one evening, but once you start wiring it in, be sure you have all the materials needed, because your car is dead until you finish. Briefly, here is what you do. The diagram below will illustrate. First, disconnect the battery, ground terminal first. Remove the seats, floorboards if present, and both ends of the tunnel. Remove the right rear wheel and jack up the car. Disconnect the heavy red wire which runs from the starter to the connection farthest to the right on the voltage regulator on the engine fire wall. This disconnected section can be drawn out of the loom containing other wires and used again later. Now run a heavy No. 6 multistrand wire from this connection on the voltage regulator (the heavier the cable the less loss) out of the engine compartment, under the body over the transmission, into the tunnel, and up to the positive side (marked A on VDO ammeter) of the ammeter. Solder all connections on this and other wiring, insulate with extra outer fireproof loom, and carefully seal the entrance into the rear of the tunnel. Fix the cable under the body and in the tunnel to avoid any contact wear or interference with moving parts. The cable to the positive terminal of the battery runs directly to the starter. At its junction with the terminal of the battery a smaller No. 10 gauge wire joints it. This wire runs up to the fuse box to supply all electrical needs of the car's "household circuit." Disconnect this wire where it enters the fuse panel, splice it with enough more similar wire to run



on up to the negative pole of the ammeter (marked E on VDO). Now, connect another length of similar No. 10 wire to the positive side of the ammeter and run it down to the fuse panel and connect where you disconnected the other wire. The wire you salvaged from the rear of the car will suffice for both these needs. Wire illuminating light on ammeter and oil pressure gauge by extension off nearby tachometer lights. You will have to ground the ammeter case if it is mounted through the wood panel in order to make the illuminating globe burn. Check everything over again and you are ready to reconnect the battery, positive terminal first. As installed, the ammeter works beautifully. The generator prior to 1954 was of 22 amp. capacity, and since is 26 amps. With an ammeter, you can get a good idea of your battery's condition, and also become aware of any shorts in your system. The red light remains in working order, and will let you know if the fan belt breaks. The green light is dead if you install the oil pressure unit. You could utilize this light for some other warning system of your own invention if you care to.

Gene Rideout

OIL FILLER MODIFICATION

Alfred E. Kuntz writes from Canada that in operating his Porsche in cold weather a considerable amount of condensation collected in the oil filler assembly and the water formed ran into the crankcase.

He eliminated this condition by replacing the factory rubber gasket in the filler cap with a cork gasket of similar thickness (he used two gaskets made from sheet cork) but covering the entire inside of the filler cap. This eliminated the condensation in ordinary cool weather but in zero weather, he pulled an old heavy woolen mitt over the entire oil filler assembly. This apparently kept the parts above the dew point temperature as it eliminated all condensation.

SOMETHING NEW IN BALANCING

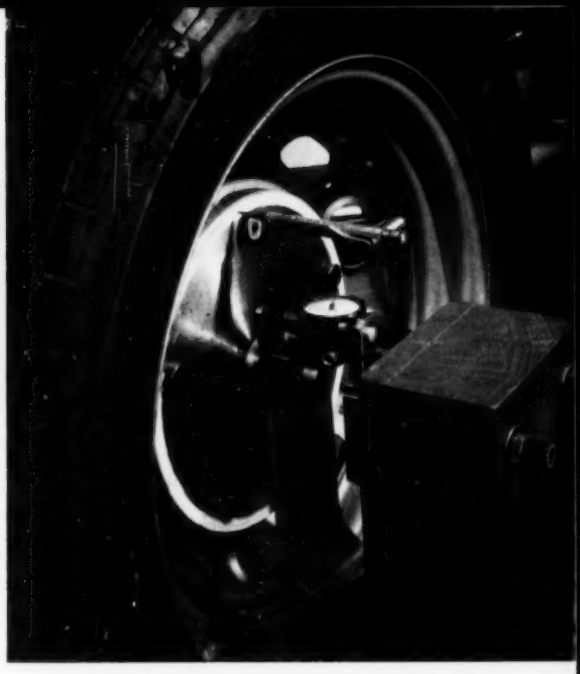
Before describing this machine, let us consider why wheels should be balanced. An imbalance of one ounce at 800 rpm. on a radius equal to the tread of a tire imposes a radial force of about 13 lbs. which seems insignificant compared to the over 1000 lbs. capacity of a front wheel bearing. However, this weight, being outside of the plane of the steering spindle (or king pin), causes an alternating steering to the right and the left as the wheel rotates. This tendency accelerates wear on all elements of the suspension and steering mechanism, and, in the case of the Porsche, the end-play in the trailing links takes a beating. For a car to glide smoothly at high speed with no tendency to fly off the road, it is necessary that camber and caster be correct and that all wheels are concentric and balanced.

The desire to verify the balance of my own wheels led me to build the device pictured, which I shall proceed to describe.

There is a disk mounted on a hub containing a precision ball bearing. This bearing has two rows of balls, is internally pre-loaded so that it has no lateral looseness, but rotates very freely. This disk has five studs for mounting the wheel. In its present form, it fits only Porsche and VW wheels but could be made for any wheel. These studs are exactly spaced at 4.0378 radius and 72 degrees, within .0002 inch, to perfectly center of the wheel. The shaft on which this disk rotates is attached to a piece of steel formed to a "U" which makes it a gooseneck spring. The fixed end of this spring is firmly attached to a vertical post of 4 x 6 oak having suitable floor feet so it will stand upright. The rotating disk is accurately machined all over and carefully balanced. The five studs are provided with bushings and nuts with which to secure the wheel. The bushings are hardened and ground all over and are slotted so that they close on the studs as they seat into the countersunk holes in the wheel. The slotted end of the bushings have a form like the wheel-nuts on the car. These bushings and the nuts have been made to weigh alike within ½ grain, so they may be interchanged on all of the studs.

It will be seen now that the essence of this device is a freely rotating wheel mounting attached to a spring that is quite flexible and will bend and unbend as an imbalanced wheel is rotated. It is so sensitive in fact, that the weight of the valve-cap will show at speed as low as 50 rpm.

To balance a wheel, the tool is laid down on its back so the wheel may be set down over the studs, the bushings and nuts applied, and moderately tightened. Then the machine is set



upright as in the photos. The wheel will turn to bring the heavy side to the bottom and the user puts a weight on the edge of the wheel at the top. Do not drive the tongue of the weight down between the tire and rim until you have finished the balancing. Just clip it onto the edge of the steel wheel. A few minutes of experimenting with different size weights bring it to STATIC balance.

Now we proceed to correct dynamic balance. This means that we may move the weight that we have already placed, from one side of the wheel to the other, or divide it between sides with smaller weights, or place more weights at other places. If we give the wheel a spin with the hand at about 75 rpm., the spring will bend back and forth even though the wheel is statically balanced. This indicates dynamic imbalance.

Referring to the close-up view, you see that I have applied white shoe polish to the rim of the disk, and have provided a bracket to facilitate steady holding of a pencil. With the wheel rotating (it coasts about ten minutes from a quick stroke of the hand) the pencil is advanced until it makes a mark on the white. This shows that the wheel is lightest on the inside at this point (side toward you in the picture), so a weight must be placed here and also at 180 degrees from it on the outside, as we must not spoil static balance in correcting dynamic. Here again, we must experiment with sizes of weights, or file off weights to correctness. When the pencil, delicately applied, touches the disk all of the way around, the job is finished. Take the wheel off, lay it on the floor, pry the tire away from the side of the rim near each weight and seat the weights to their final position.

This may sound like a lengthy process but one learns the technique of it after doing a few wheels. It takes me about a half hour for a wheel now.

The dial indicator shown in the picture was an assistance in learning the job but is no longer necessary as I can correct within the weight of the valve cup using the pencil. I did experiment with a flashing electric light but abandoned it because, while it made a good show for the audience, it was no more accurate and made it more cumbersome. A square hole shows in the end of the hub. It was for the purpose of driving the wheel with an electric drill but proved unnecessary as the balancer is adequately sensitive at low speeds.

I designed this device while eating lunch one day and built it on two stormy Saturdays. Total time required—22 hours.

Clarence Rutbell

PANORAMA PICTURES

Some time ago, we offered to pay ($2.00 each) for Photos sent in and used in Pano. We have not been swamped with Pix but, nevertheless, find that rising costs of Production have curtailed the Pano Budget so that we must withdraw our offer for Paid Pix.

We *hope* that you will still send in Porsche Pictures that will be of interest to other PCAers . . . you will, of course, get Credit but no Cash. We *know* that literally hundreds of PCAers are taking Porsche pictures. We would ALL like to see them, so PLEASE send them in to Charles Beidler, Editor, Box 136, Langhorne, Pa.

PORSCHE PERFORMANCE WITH "PERFORMETER"

(Ed.—This is the first of three parts dealing with that gadget known as the "Perfometer." The second part will be a comparison of a '54 1500 N coupe with several sports cars and several American sedans. The third part deals with comparisons of the various models of Porsches currently available, both used and new.)

If you could carry a dynamometer around in your hip pocket you would know more about your car than most Porsche owners. You cannot quite do that, but you can come close to it . . . if you can get hold of the instrument to be described. For some years, an instrument called a Perfometer was extensively advertised in the sports car papers. What happened to the makers of this Austrian device, I do not know other than that we no longer see the ads. Now and then, some of the supply houses offer them at low prices. If you see one, latch onto it in a hurry.

The Perfometer is the size of a speedometer and can be quickly fitted to any car. It is *not* hooked to the engine manifold and touted to tell you all things at all times. It is *not* connected with wires, tubes, belts, chains or anything else. It could—if your hand were steady—be held in your hand and it would still work. In the published road tests, you often read of the English Tapley meter, which is a device of the same type but far more costly. So, without connections, how does it work?

Go back to your high school physics and think of Old Man Gravity, whose sole job is trying to pull everything tight to the face of the Earth. Everytime we move, we are fighting gravity. Here is a simple experiment: tie your pocket knife to a hunk of string and hold it at arm's length. The knife will hang down like a plumb bob. Now, swing your arm sideways and the knife will trail backwards. Suddenly, stop the swing and the knife will carry on a bit because of its momentum. All you did was demonstrate the workings of gravity. Gravity tried to hold the knife directly below your fingers. Your swinging arm beat gravity to the punch, but the old guy eventually won and the knife hangs plumb.

The Perfometer and the Tapley meter are nothing put pendulums attached to a pointer so that the amount you defy gravity can be measured. To avoid the wild swinging of a free pendulum, the one in the instrument is dampened in an oil bath to put a brake on its gyrations. It is all just about as simple as Newton getting conked with that famous apple.

Let's suppose that you have the instrument. You can permanently mount it on the dash, on the steering column or almost any other place you desire. Drive the car onto a level floor, hook up the device, monkey with a clamp screw until the needle registers zero, tighten the clamp and you are set for life. Some models of the Perfometer—probably due to the demands of the sales department—had numerous concentric circles that were supposed to sit up, beg, and relate all sorts of things. Pay attention to nothing but the outer row of figures which begin with 0 at the top and run in both directions to 40 at the bottom. The series in the clockwise direction are for acceleration while the anti-clockwise series is for deceleration. Forget all of the other pretty figures and multi-colored dials.

If you know the weight of your car, including fuel and two persons, you are ready to begin. If there is any doubt, take the car to the nearest coal yard and have it weighed. As you will need the weight in tons and decimal parts of a ton, don't worry about a pound or two error.

The next step is to find a stretch of reasonably straight road that is free of police. Have your co-pilot equipped with a pad and pencil. On one side of the sheet marked "GO," place a column of figures from 20 to 60 mph or more, if you think you can drive faster and stay out of jail. Get your pal set, put the car in high gear and get started on the course at the lowest speed possible in high gear. For a 1500 N coupe, the figure will be 20 mph with a bit of lugging. As the speedometer hits 20, call that figure to your pal and let him enter the Perfometer reading. Do the same for 30, 40, 50 and up, depending upon how well the police like you.

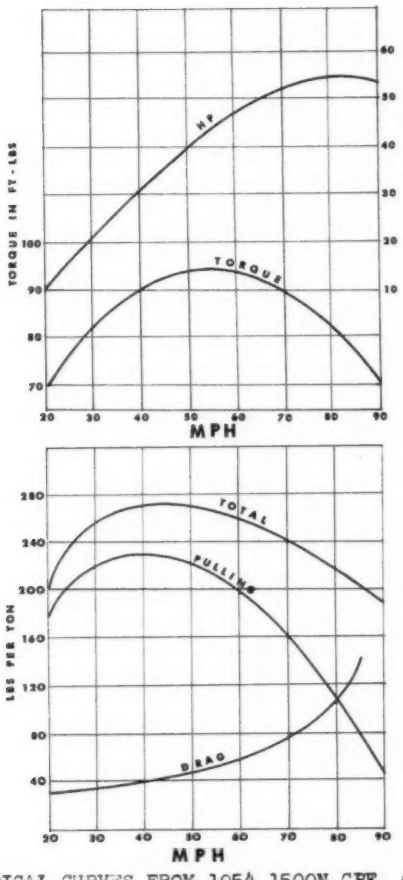
If you are fussy, take the readings at five mile intervals. Check the sheet over to see that all the figures were entered correctly. Now, go over the same course again, but, this time, start in at the maximum speed you attained on the accelerating runs. When you reach that speed, put the car in neutral and sing out the speedometer readings as the car slows down. This will give you the deceleration readings due to wind and rolling resistance. If you wish, although it has nothing to do with the main object of this business, put on a few panic stops and take a reading for the brake efficiency. Now, go home and get out the scratch pads.

Prepare a graph like the sample shown. You will use this to plot your curves. Next, prepare a scratch sheet with the following columns:

ACCELERATION

A	B	C	D
Mph	Perf. Rdg	B X 20	C X tons

Under A, list the speedometer readings; under B list the instrument readings for the corresponding speeds; under C multiply the B figures by 20; under D multiply the C figures by the running weight of the car, in tons and decimal parts of tons.



TYPICAL CURVES FROM 1954 1500N CPE. ODOMETER 5300 MILES TIRE PRESSURES 26 - 30.

A similar table will be marked "Deceleration" and, under B, list the readings you obtained with the car in neutral. These will be the drag figures when you refer to the D column.

Plot the acceleration figures on the curve marked "Pulling." The drag figures provide the curve of the designation. Now, add the "Pulling" and "Drag" figures for each speed and plot the "Total" curve. You could let it go at that, but it is quite simple to carry on with the horsepower and torque curves. From your manual or from almost any road test sheet, find out the miles per hour per 1000 rpm's. Across the top of your sheet, lightly mark in the rpm's for the various speeds shown at the bottom of your graph. Horsepower is now found by multiplying the "Total" figures by MPH and dividing by 375 and the torque, in lb.-ft., is Hp multiplied by 5252 and divided by rpm's, or:

$$HP = \frac{(\text{"Total"})\ (MPH)}{375}$$

$$\text{Torque} = \frac{(HP)\ (5252)}{RPM}$$

Plot these figures and your curve sheet should look like the illustration.

If these figures do not check with those of the factory, it does not mean that either set is wrong. The sheet you just prepared is the actual road performance measured at the rear wheels. In itself, the graph is not of vital importance unless you keep it and run similar tests after changing plugs, adjusting carburetors, or doing anything else to the car. Then you can tell at a glance whether the changes have been worthwhile. Additional tests can be made with the windows open or closed, with the top up or down, with different grades of gasoline or brands of oil. You should run your test over the same stretch of road and under similar weather conditions.

If the Porsche owner will take all this seriously and retain the charts in a binder, he will have a picture of performance that could not be obtained as simply and accurately, as economically and quickly, or by any other method known to this writer.

Bowser, Monks, and Whitehouse, Ltd., Spring Gardens, Doncaster, England, advertise an instrument which seems to be similar to the Perfometer. The price quoted is approximately $17.00 in U. S. money. It is called the "Bowmonk Dynometer."

Gerald White

GEAR RATIOS AGAIN

Since last month's article on gear ratios, we have been informed by the factory men that the 7-tooth pinion, 34-tooth ring gear combination is no longer available. This leaves the 7 to 31 and 6 to 31 combinations. The factory feels that the 6 to 31 ring gear and pinion is strictly for racing and you definitely take chances with your warranty under these circumstances. In fact, your service book says, "No warranty if the car is used for competition." They would look with suspicion on any car ordered with the 6 to 31 rear end ratio.

We expect to receive more information on this subject from the factory men. They did feel that it is somewhat on the ragged edge to take any Normal or Super to 6000 RPM for even a short period . . . unless you have a hat over the exhaust pipes to catch the valves.

SPEED CHANGES IN RALLIES

Ed. Note: This is the first of a series on rallying by Potomac Region's Tommy Thomas. Succeeding articles will cover odometer errors, computers, timing, and the like.

Of all the problems facing a rally contestant, probably none gives as much trouble as speed changes, especially if there are many such points close together in the rally. Speed change points are not too bothersome if the contestant reaches these points with a little time on hand. He has the time to stop and make the usual calculations, then depart on the new element with no error. It's an entirely different matter if he is late at the speed change point. He not only lacks time to make suitable calculations, but he is faced with the problem of making up the lost time at a rate of speed differing from the one wherein he lost the time. It REALLY gets complicated if he comes across another speed change before he has completely figured out the problem posed by the first one.

Before going further with the discussion of what to do at speed change points, it seems wise to digress for a moment and examine the basic task confronting the contestant. In this respect, the rally contestant could be compared with the importer who buys his wares abroad and sells them in this country. His purchases are frequently made with a foreign currency and his sales are made in U. S. currency. Knowing the rate of exchange, he will use a slide rule or a set of tables to determine the equivalent prices. The rallyist does the same thing, only in this case he "buys" in miles and "sells" in time—the rally instructions giving him the "rate of exchange." Furthermore, the chap who laid out the rally "bought" the rally in miles—went home and figured out the "rate of exchange" and "sells" the rally to the contestant in time.

THIS IS IMPORTANT, because too many contestants operate in exactly the reverse manner. Influenced by published tables or for some other reason, they insist on looking at the clock, consulting their slide rules or tables, then coming up with a mileage figure for comparison with the odometer. It is so much easier to read the odometer, go to the slide rule or tables, then come up with a "time" for comparison with their timing device—so much easier for the simple reason that sooner or later they have to do it anyway—at the speed change points. This is true because rallies are measured and points lost timewise, not by distance. It is safe to say that if rally contestants would get into the habit of reading the odometer, calculating for time and comparing with their watch or clock to determine their performance, half the battle at the speed change points is already won.

What do you do at the speed change point? It is easiest to consider that you have just completed a rally and are starting a brand new one. In order to find out how you did on the "first" rally and as the basis for "starting" the next rally, jot down the mileage and the time. From these figures you can figure out your score (early or late, and how much.) Now comes the question, "What to do about the error if any?" Simple! Just drive the "next" rally with that much time in hand if you were late, or behind if you were early! The driver plays an important role here. He is given the responsibility for keeping early or late by the amount of the error, leaving the navigator the routine chore of calculating performance without taking the error into consideration. Less mistakes will be made if the navigator writes the error on a slip of paper and puts it on the dash in front of the driver (no car should be without masking tape.) At the next speed change point, any new error is combined with the previous one to determine the net error to be considered by the driver during the ensuing portion of the rally.

The above described method of handling speed changes is only one of many others and there is no claim that it is better than the rest. It is considered to be about as simple as most—with possibly less complications and chances for mistakes. The use of Kodak Timers, wherein the errors can be inserted, offers a simple solution if the lack of accuracy in such timers can be tolerated. "Running in" a small unit of time on a stop watch of the proper type is also another method with merit. The graphic method of navigating solves the problem rather neatly also, particularly where there are an extremely large number of speed changes coming one on top of another, but again the limit of accuracy is a factor to consider. In the final analysis, the exact method to use at speed change points will come as a result of the individual's own experience and his capability with various methods.

Capt. H. E. Thomas, U.S. Navy

SEE YOU AT THE

PORSCHE PARADE

JULY 23-26

CLUTCH ADJUSTMENT FROM LATE '56—1600's ON

The following is the procedure for adjusting the clutch using only a screw-driver. It can be used in cases of emergency when the large wrenches required for the factory recommended procedure are not immediately available. The foot pedal clearance should be 0.8 - 1.0 inches.

1. Slide both seats all the way to the rear.
2. Working from the passenger side of the car in this step and the following ones, remove the front floor mat. It is held in position by four snaps at the top. Be careful not to tear the rubber as the floor mat is guided over the floor pedals.
3. Disconnect the throttle linkage from the gas pedal by pulling linkage to passenger side of the car. It is held by a snap-on socket.
4. Loosen the two screws at the base of the gas pedal with a large screw-driver until they are about one-half inch out from their tightened position. This allows the gas pedal to fall back out of the way of the floorboard.
5. To remove the floorboard, push the two spring clips at the top of the floorboard through the metal bracket and lift the floorboard up out of the bottom slots. Bring the lower part of the floorboard out over the pedals with the gas pedal pushed to the center cut-out of the floorboard. Slip the floorboard down under the gas filter and remove from car.
6. With the right hand depressing the clutch pedal, remove the rubber stop behind the clutch pedal by working it back and forth with the left hand and pulling it towards the front of the car.
7. Let the clutch pedal fall back. Locate the clutch cable and where it connects to the clutch lever shaft. Notice that on the end of the cable is a nut with a concave face that rides against the clutch lever shaft. With the clutch pedal resting back, the cable nut can easily be turned with the fingers to increase or decrease the clutch cable length to the desired setting. The nut will be self-locking in any position it is set.
8. To put the pieces back in the car, just reverse the order in which they were taken out. Be particularly careful when putting the rubber stop back into position. It will go into position easiest if it is rotated while pushing it through the hole. Also, when putting the floorboard in, don't forget to put the throttle linkage through the correct hole just before lowering the floorboard into the bottom slots.

The whole job should take about 20 to 30 minutes.

Leroy C. Van Allen

Ed. Note: As mentioned before, it is wise to put a 6 mm. lock nut on the cable locking the supposedly "self-locking" adjusting nut mentioned in this article.

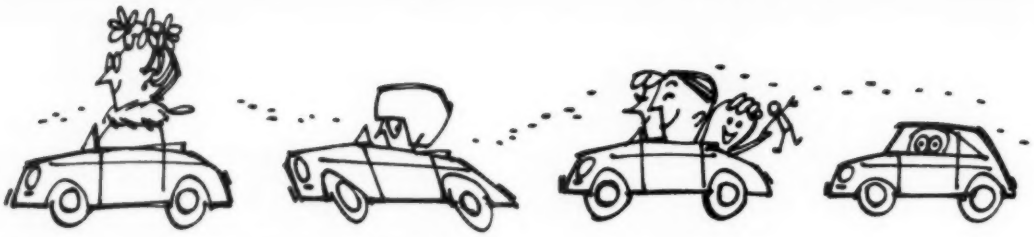
FOR SALE

'57 Super Coupe, silver with red, delivered Oct. 1, 9,000 miles, never raced or over-reved, latest clutch and transmission. Will accept trades.—*R. I. Owen, Townsend Road, Watkins Glen, N. Y. Tel. 666 J-2.*

'57 1600 N, Polyanthia red, Abarth muffler, safety belts, show room condition.—*Fred A. Mock, 6121 S. Kilbourn Ave., Chicago 29, Illinois. Tel. PO. 7-3619.*

PORSCHE CLUB OF AMERICA, INC.
STATEMENT OF RECEIPTS & DISBURSEMENTS
for the Period Jan. 1, 1958 to Mar. 31, 1958

CASH ON HAND JAN. 1, 1958		
Cash in Bank	$3,062.73	
Petty Cash	25.00	
TOTAL CASH JAN. 1, 1958		$3,087.73
RECEIPTS		
Badges	$ 460.00	
Dues	5,449.00	
Emblem Medallions	8.00	
Emblem Pins	6.25	
Jacket Patches	40.00	
Lapel Pins	15.00	
Lighters	16.00	
Sebring Film	192.50	
Technical Manuals	20.90	
TOTAL CASH RECEIPTS		6,207.65
TOTAL CASH TO BE ACCOUNTED FOR		$9,295.38
DISBURSEMENTS		
Refund on Dues	$ 5.00	
Porsche Parade	26.23	
Bank Charge	.50	
Clerical Work and Typing	55.50	
Insurance and Bonds (Treasury)	12.50	
Mailing and Postage	243.69	
Porsche Panorama	1,059.02	
Sebring Movie Film	102.14	
Stationery and Printing	500.54	
Travel	4.00	
Telephone	41.55	
Accounts Payable—Potomac Region	2.50	
Accts. Receivable—P.C.A.-N.Y.	300.00	
Accts. Receivable—Returned Check	10.00	
TOTAL CASH DISBURSEMENTS		$2,363.17
CASH ON HAND MAR. 31, 1958		
Cash in Bank	$6,915.24	
Petty Cash	16.97	
TOTAL CASH MAR. 31, 1958		6,932.21
TOTAL CASH ACCOUNTED FOR		$9,295.38



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MORE ON THE "SLEEPER"

The "Sleeper" (see March Pano) and its "Keeper" paid us a visit this month. There are now over 100,000 miles on this bomb. We had hoped to run timed laps at the Driver's School course of the Eastern Pennsylvania Region but the inclement weather conditions prevented this. We were out to break the record for production bodied Porsches of 54 seconds set by PCAer Horace Ott. Horace was going to try to smash this mark with Harry Mersheimer's blown 1500 convertible, but . . . rain . . . rain . . . rain!

Harry has received many letters from other PCAers asking if he plans to make up blower kits, etc. As of this date, he has no intentions of doing any manufacturing and further states that supercharging, as he has done, can mean real trouble unless you know what you are doing. It took Harry 5 years to be completely satisfied. So . . . unless you are willing to invest time, money, effort, and plenty of ingenuity for manufacturing many of your components, leave this to the experts in this field.

Harry loves this car so much that when it gets ready to retire, he'll dig a hole in the back yard and bury it rather than see it leave his hands.

NEWS ON BECKER RADIOS

Dr. Milton J. Allen, Northern New Jersey Region sends along a note of interest to the many members who may have a Becker radio in their car and are dissatisfied with the results. Those interested in more power from their Becker so that it can be heard above the engine at high speeds and no sound distortion should contact Witte Import Distributors, 613 South 24th Street, Philadelphia 46, Penna. Witte, for a very nominal charge, will convert their present 6-volt power supply to a push-pull power unit.

The advantages of the push-pull modification is of special value in the Porsche where at high speeds there is so much engine noise that the radio does not have sufficient power to overcome this when the regular power unit is used. To overcome this noise it is necessary to have about a 4-5 watt output. The regular power unit will only put out about 3.5 watts and at the maximum output will be quite distorted. Therefore to those with a keen ear and a desire for good music on the road especially at high speed, the push-pull power supply rated at 7 watts is most desirable.

Remember the dates—July 23 to 26. MARK YOUR CALENDAR—NOW.

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